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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/598,379

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EXAMINER

ABRAHAM, AMJAD A

ART UNIT

PAPER NUMBER

1791

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,379	<b>Applicant(s)</b> STOLARCZYK ET AL.	
	<b>Examiner</b> AMJAD ABRAHAM	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/13/2006 and 11/28/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claims 9 and 19 disclose that the elongation of the restored rail seat is at least about 10%. However, the specification teaches only that the polymer material has an elongation of over 10%.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. *Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Giorgini et al (USP No. 7,138,437) in view of Rhodes et al. (USP No. 4,295,259).*

5. Regarding claims 1, 11, and 21 Giorgini teaches a method for repairing structural members by using a polyurethane material to repair the structural members. **(See abstract)**. Giorgini goes on to teach that the structural members can be rail tie assemblies. **(See claims 9, 11, and column 8 lines 24-31)**. Furthermore, Giorgini teaches that a polyurethane mixture is applied to the rail tie void (defect). **(See claim 11 and column 8 lines 12-40)**. Moreover, the polyurethane material is cured to repair the rail tie. **(See column 2 lines 39-42 and example 8 in Column 11 line 64 to column 12 line 18)**. Finally, a sag resistant polymeric repaired article is produced. **(See abstract disclosing the addition of strength enhancers that would give the repaired article excellent strength in order to prevent deformation during a train pass)**.

Art Unit: 1791

a. Conventionally, rail seats are part of rail tie assemblies as they insulate the rail from the rail tie. **(See applicant's specification page 1 lines 9-12).**

Furthermore, rail seats can be made of polyurethane. It would have been obvious to apply the teachings of Giorgini to include the repair of the rail seat portion of the rail tie assembly as Giorgini stands for repairing polyurethane based components in a rail tie assembly. As the rail seats and rail tie (defects- see spike hole defects on rail ties as seen in Giorgini-abstract) are both repaired using of polyurethane it would have been obvious for one having the ordinary skill in the art apply Giorgini's process to rail seats.

i. Although rail ties themselves are typically concrete, defects in these concrete rail ties such as spike holes are repaired using the process of Giorgini. **(See abstract)**. Polyurethane is added to repair the defects and it would have been obvious for one having the ordinary skill in the art to use polyurethane to fix other polymeric rail tie components such as a rail seats with the same polymeric material (polyurethane).

b. With respect to claim 1, Giorgini does not expressly teach restoring the damaged rail seat by curing the polymeric material under ambient temperature and pressure conditions.

c. However, Rhodes teaches a method of repairing (filling) defects (holes) in a railway tie. **(See Abstract)**. Rhodes teaches an In Situ method of plugging a railroad tie by adding a polyurethane foam which is curable at outdoor ambient temperature and pressure to make a rigid repaired article. **(See claim 1)**.

Art Unit: 1791

d. Obviously, the repaired article formed from the process disclosed in Giorgini and Rhodes would have the claimed Sag resistance as well as maintains the shape without substantial run-off as the combination of Giorgini and Rhodes applies the same process and materials as those disclosed in the instant application. The processes disclosed in Giorgini and Rhodes both are for Rail assemblies and one having the ordinary skill in the art would have made sure that the repaired material had adequate sag resistance in order to withstand railroad operations.

e. Giorgini and Rhodes are analogous art because they are from the same field of endeavor which is repairing or altering a railroad tie assembly. At the time of the invention, it would have been obvious to one having the ordinary skill in the art, having the teachings of Giorgini and Rhodes before him or her, to modify the teachings of Giorgini with the teachings of Rhodes for the benefit of repairing the rail tie on site. The motivation would have been to eliminate the need to bring heating or pressuring equipment on site in order to repair the tie assembly. Therefore, it would have been obvious to combine Giorgini with Rhodes to repair the rail tie because one would have been motivated to fix the tie on site without the need to move heavy machinery.

f. Additionally regarding claim 11, Giorgini does not teach wherein the curing of the polymeric material can be at an ambient temperature as low as 45 F.

ii. However, Rhodes teaches wherein the polyurethane is curable at an outdoor ambient temperature and pressure. (See claim 1).

Art Unit: 1791

iii. It is well known that 45 F is a typical outdoor temperature that is commonly encountered as within the typical temperature range of Earth's climate.

g. Additionally regarding claim 21, Giorgini does not teach wherein the curing is done without the use of non-ambient heat and pressure.

iv. However, Rhodes teaches wherein the polyurethane is curable at an outdoor ambient temperature and pressure. (See claim 1).

v. It would have been obvious to one having the ordinary skill in the art that no additional means for applying heat and pressure need be applied to cure a polymeric material that is curable under ambient conditions.

6. Regarding claims 2-3 and 12-13, Giorgini does not teach: (1) wherein the damage rail seat is restored without requiring the use of non-ambient heat and (2) wherein the damage rail seat is restored without requiring the use of non-ambient pressure.

h. However, Rhodes teaches wherein the polyurethane is curable at an outdoor ambient temperature and pressure. (See claim 1).

i. It would have been obvious to one having the ordinary skill in the art that no additional means for applying heat and pressure need be applied to cure a polymeric material that is curable under ambient conditions.

Art Unit: 1791

7. Regarding claims 4-5 and 14-15, Giorgini teaches wherein the polyurethane composition has a gel time that can be less than 5 seconds. **(See column 3 lines 35-49).**

8. Regarding claims 6 and 16, Giorgini does not explicitly teach wherein the Set Time of the polymeric material is sufficient for contouring the restored rail seat in situ without requiring the use of non-ambient heat.

j. However, Rhodes teaches wherein the repair method is In situ and at ambient pressure and temperature. **(See claim 1),**

k. It would have been obvious to use an in situ repair process to minimize the need for addition machinery or laborers to repair the rail seat. Furthermore, rail roads assembly's typically must be repaired on site in order to minimize the track down time. Thus, it would have been obvious to use a polyurethane material with a reasonable set time that would minimize track down time.

9. Regarding claims 7-10 and 17-20, the combination of Giorgini and Rhodes do not expressly teach: (1) wherein the rail ties having the restored rail seat maintains the gauge of a rail assembly under dynamic operating conditions; (2) wherein the modulus of the restored rail seat is increased to a level which will resist compressive loading and maintain the rail gauge of the rail assembly; (3) wherein the Elongation of the restored rail seat is at least about 10%; and (4) wherein the Shore D (24 hour) Hardness of the restored rail seat is at least about 65.

l. However, Rhodes teaches that Polyurethane is capable of with standing temperatures up to 300 F, which exceeds the maximum temperature that a



Art Unit: 1791

railroad would typically see. On the other end, low temperature properties of polyurethane are stable. Therefore, repairing a rail assembly with polyurethane would lead to a rail assembly system that does not deform or fatigue due to temperature or pressure changes. **(See column 7 lines 23-32)**.

m. Additionally, Giorgini teaches that strength enhancers, hydrophobic enhancers, and impact absorption enhancers can be added to polyurethane to make a more stable repaired article. **(See abstract)**. Having better impact absorption will eliminate or minimize structural damages that may occur from railroad vibration or jolts and thus allow the rail assembly to perform under dynamic operating conditions.

n. Furthermore, one of ordinary skill in the art would have obviously recognized that the claimed properties of the restored rail seat would have naturally flowed from the claimed process and the claimed materials used in the claimed process. Since, Giorgini in view of Rhodes provides the same process and the same materials as the claimed invention, one of ordinary skill in the art would have obviously recognized, with all things being equal (process and materials), that the process of Giorgini and Rhodes would have produced a restored rail seat having the claimed properties.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMJAD ABRAHAM whose telephone number is (571)270-7058. The examiner can normally be reached on Monday through Friday 8:00 AM to 5:00 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Phillip Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AAA

/Philip C Tucker/  
Supervisory Patent Examiner, Art Unit 1791